

<b>ORDER FOR SUPPLIES OR SERVICES</b>										PAGE 1 OF 19	
1. CONTRACT/PURCH. ORDER/ AGREEMENT NO. N65540-15-D-0005			2. DELIVERY ORDER/ CALL NO. 0003		3. DATE OF ORDER/CALL (YYYYMMDD) 2015 Aug 14		4. REQ./ PURCH. REQUEST NO. 1300617840		5. PRIORITY		
6. ISSUED BY NAVAL SURFACE WARFARE CENTER CARDEROCK (b) (6) 5001 SOUTH BROAD STREET PHILADELPHIA PA 19112-1403				7. ADMINISTERED BY (if other than 6) DCMA HAMPTON 2000 ENTERPRISE PARKWAY HAMPTON VA 23668		8. DELIVERY FOB <input checked="" type="checkbox"/> DESTINATION <input type="checkbox"/> OTHER  (See Schedule if other)					
9. CONTRACTOR GENERAL DYNAMICS INFORMATION TECHNOLOGY, NAME (b) (6) AND 3211 JERMANTOWN RD ADDRESS FAIRFAX VA 22030-2844				10. DELIVER TO FOB POINT BY (Date) (YYYYMMDD) <b>SEE SCHEDULE</b>		11. MARK IF BUSINESS IS <input type="checkbox"/> SMALL <input type="checkbox"/> SMALL DISADVANTAGED <input type="checkbox"/> WOMEN-OWNED					
12. DISCOUNT TERMS				13. MAIL INVOICES TO THE ADDRESS IN BLOCK See Item 15							
14. SHIP TO NAVAL SURFACE WARFARE CENTER CARDEROCK (b) (6) 1601 LANGLEY AVENUE PHILADELPHIA PA 19112-5051				15. PAYMENT WILL BE MADE BY DFAS COLUMBUS CENTER, SOUTH ENTITLEMENT O P.O. BOX 182264 COLUMBUS OH 43218-2264				<b>MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.</b>			
16. TYPE OF ORDER		DELIVERY/ CALL		<input checked="" type="checkbox"/> X		This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.					
PURCHASE		<input type="checkbox"/>		Re-renew your quote dated Furnish the following on terms specified herein. REF:							
ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.											
NAME OF CONTRACTOR				SIGNATURE				TYPED NAME AND TITLE		DATE SIGNED (YYYYMMDD)	
<input type="checkbox"/> If this box is marked, supplier must sign Acceptance and return the following number of copies:											
17. ACCOUNTING AND APPROPRIATION DATA/ LOCAL USE											
<b>See Schedule</b>											
18. ITEM NO.		19. SCHEDULE OF SUPPLIES/ SERVICES				20. QUANTITY ORDERED/ ACCEPTED*		21. UNIT		22. UNIT PRICE	
		<b>SEE SCHEDULE</b>								23. AMOUNT	
* If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.						24. UNITED STATES OF AMERICA (b) (6)		25. TOTAL (b) (6)		\$3,669,718.24	
27a. QUANTITY IN COLUMN 20 HAS BEEN						CONTRACTING / ORDERING OFFICER		26. DIFFERENCES			
<input type="checkbox"/> INSPECTED <input type="checkbox"/> RECEIVED <input type="checkbox"/> ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED											
b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE						c. DATE (YYYYMMDD)		d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE			
e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE						28. SHIP NO.		29. DO VOUCHER NO.		30. INITIALS	
f. TELEPHONE NUMBER						g. E-MAIL ADDRESS		<input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL		32. PAID BY	
36. I certify this account is correct and proper for payment.						31. PAYMENT <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL				33. AMOUNT VERIFIED CORRECT FOR	
a. DATE (YYYYMMDD)		b. SIGNATURE AND TITLE OF CERTIFYING OFFICER								34. CHECK NUMBER	
										35. BILL OF LADING NO.	
37. RECEIVED AT		38. RECEIVED BY		39. DATE RECEIVED (YYYYMMDD)		40. TOTAL CONTAINERS		41. S/R ACCOUNT NO.		42. S/R VOUCHER NO.	

FOIA Exemption B4 Contractor Proprietary and Private

**Section B - Supplies or Services and Prices**

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001			Lot		
	Engineering and Technical Services				
	CPFF				
	FOB: Destination				
				ESTIMATED COST	
				FIXED FEE	
				TOTAL EST COST + FEE	

FOIA Exemption B4 Contractor Proprietary and Private
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
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000101					
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Funding for CLIN 0001

CPFF

10 U.S.C. 2410(a) is hereby invoked. Funding available for performance through 03/03/2018.

FOB: Destination

PURCHASE REQUEST NUMBER: 1300517640

ESTIMATED COST

FIXED FEE

TOTAL EST COST + FEE

ACRN AA

CIN: 130051764000001

FOIA Exemption B4 Contractor Proprietary and Private

0003

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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002			Lot		
	Support Costs				
	COST				
	FOB: Destination				
				ESTIMATED COST	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
000201			Lot		
	Funding for CLIN 0002				
	COST				
	10 U.S.C. 2410(a) is hereby invoked. Funding available for performance through 03/03/2018.				
	FOB: Destination				
	PURCHASE REQUEST NUMBER: 1300517640				
				ESTIMATED COST	
	ACRN AA				
	CIN: 130051764000001				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005		1	Each		NSP

**Technical Data**

For Item 0001 through 0003 in accordance with DD Form 1423 Contract Data Requirements List contained herein: NSP: "NOT SEPARATELY PRICED".

FOB: Destination

FFP

NET AMT

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## Section C - Descriptions and Specifications

### STATEMENT OF WORK

#### **STATEMENT OF WORK INSTALLATION SERVICES FOR SHIPS MODERNIZATION AND TECHNICAL ADVANCEMENT**

#### **1. SCOPE**

1.1. Naval Surface Warfare Center, Ship Systems Engineering Station (NAVSSSES), Code 51, as In-Service Engineering Agent (ISEA) for ship systems are tasked with providing engineering and System testing and installation support for the design and installation of Ship Modernization Technologies. The objective of this contract is to obtain installation services to support NSWCCD implementation, and testing of Ship Change Documents (SCD) and other Machinery Control System alterations for US Navy ships (MCM Class) and Foreign military ships (FFG Class) related to the following:

- 1.1.1. Digital Damage Control System (DDCS)
- 1.1.2. Advanced Damage Control System (ADCS)
- 1.1.3. Integrated Ship Control System (ISCS)

#### **2. REQUIREMENTS**

##### **2.1. General Services**

2.1.1. Provide to NAVSSSES the following support and services for the tasking listed in this statement of work.

- 2.1.1.1. Provide materials as identified in this document when accomplishing installation services in support of the tasking identified in this statement of work.
- 2.1.1.2. Ship equipment and materials to or from ship's home ports for installation.

##### **2.2. The following MCM-1 Class systems will be supported:**

###### **2.2.1. Integrated Ships Control System (ISCS).**

Provide installation support for the Integrated Ship Control System (ISCS) on MCM-1 Class ships. ISCS is an Allen-Bradley PLC5 Programmable Logic Controller (PLC)-based system with a computer-based HMI, operating over a Local Area Network. Support transition of operating systems on the MCS computers from Microsoft Windows NT to Windows 7. Support upgrade of obsolete workstations, Network Switches and CPUs. This installation support is for installation, testing and training of the ISCS tech refresh including pre and post tech refresh support.

###### **2.2.2. ISCS Tech Refresh SCD 8356/16374**

- 2.2.2.1. Provide services for installation of SCD 8356 on four MCM Class ships and installation of SCD 16374 on five MCM Class Ships.

- 2.2.2.2. Drawings 8516726, 8516727, 8473353, 8473354 and 8473355 provide details for the installation of the SCD8356.
- 2.2.2.3. SCD 16374 is comprised of the following:
  - 2.2.2.3.1. Removal of the PORT and STBD Controllable Reversible Pitch Electronic Enclosure (CPPEE) and associated foundations.
  - 2.2.2.3.2. Cable removal (aprox 200') between each CPPEE and the PORT and STBD CPP Brass Scale.
  - 2.2.2.3.3. Cable installation (aprox 200') between each CPP Brass Scale and PLC.
  - 2.2.2.3.4. Minor wiring modifications within PLC-1 and PLC-3.
- 2.2.2.4. Contractor should anticipate providing the following material:
  - 2.2.2.4.1. 400 ft of LS3SWU-3 cable to support services listed in 2.2.2.3.3 above.
  - 2.2.2.4.2. UPS Foundation mounting plates, p/n PS1504 Foundation, Qty 40.
  - 2.2.2.4.3. Procure material indicated on NAVSEA drawings 8473353, 8473354, 8473355, 8516726 and 8516727 to support four ships. See attached material spreadsheet for list of material and total quantities.
  - 2.2.2.4.4. All IT equipment will be supplied by the government.
- 2.2.2.5. SCD 8356 Installation schedule:
  - 2.2.2.5.1. Two ships in FY16 (San Diego, CA and Manama, Bahrain) and two ships in FY17 (Manama, Bahrain and Sasebo, Japan).
- 2.2.2.6. SCD 16374 Installation schedule:
  - 2.2.2.6.1. Concurrent with SCD8356: Two ships in FY16 (San Diego, CA and Manama, Bahrain) and one ship in FY17 (Sasebo, Japan).
  - 2.2.2.6.2. Separate install: Two ships in FY16 (both in Sasebo, Japan).

### **2.3. Foreign Military Sales**

#### **2.3.1.S/A 478K/ADCS Video and Damage Control Upgrade (FMS Case # PL-P-GAX and PL-P-GAS).**

- 2.3.1.1. Provide installation support for the Digital Damage Control System (DDCS)/Advanced Damage Control System (ADCS) on one (1) FFG-7 Class ships. The DDCS is an Allen-Bradley Control Logix Programmable Logic Controller (PLC) based system with a computer based Human Machine Interface (HMI) that operates over a Local Area Network (LAN). The DDCS also has video capability. The contractor shall provide support for hardware installation and testing of the system including pre and post install support. The contractor shall be responsible for providing the material as defined in below sections.
- 2.3.1.2. Contractor will be required to procure, manufacture, kit and support the installation of all incidental materials and equipment in order to support S/A 478k for the foreign navies. The contractor will receive and kit all designated GFM equipment and ship to the designated freight forwarder as identified by NSWC-SSSES or make arrangements for shipping.
- 2.3.1.3. Provide proper identification of material and equipment, insure proper termination requirements are met and adhered to in direct support of NSWC as the acting liaison for the shipboard installation of S/A 478K for the foreign navy FFG class ships.

- 2.3.1.4. The contractor will provide installation support for the following in regards to oversight and testing.
- 2.3.1.4.1. Alteration installation
  - 2.3.1.4.2. Signal Validation and verification
  - 2.3.1.4.3. Fiber Topology Testing
  - 2.3.1.4.4. System cold checks
  - 2.3.1.4.5. System Integration
  - 2.3.1.4.6. System Operation
  - 2.3.1.4.7. System Training
- 2.3.1.5. The following redline drawings are supplied to provide detail of the installation of S/A 478K on ORP Pulaski.
- 2.3.1.5.1. 201-TBD ORP Pulaski (FF-272) Equipment and Foundation Removals
  - 2.3.1.5.2. 201-8214814 General Arrangements
  - 2.3.1.5.3. FFG35-DH-664-8700158 Equipment Foundations Fabrication and Details
  - 2.3.1.5.4. 201-8214815 Equipment Foundations Fabrication and Details Machinery Spaces
  - 2.3.1.5.5. 430-8214812 Local Area Network and Video Elementary Wiring Diagram
  - 2.3.1.5.6. 430-8214811 Local Area Network and Video Isometric Cabling Diagram
  - 2.3.1.5.7. 302-8214816 Lighting Distribution Modifications
  - 2.3.1.5.8. FFG35-DE-436-8700161 Circuit Modifications
  - 2.3.1.5.9. PULASKI FFG272 Scanned Drawings
- 2.3.1.6. Contractor should anticipate providing the following material in support of Foreign Military Sales (FMS) S/A 478K:
- 2.3.1.6.1. Procure material indicated on drawings listed in section 2.2.1.5 to support one ship. See attached spreadsheet for list of material and quantities for contractor to procure.
  - 2.3.1.6.2. All IT and PLC equipment will be supplied by the government.
- 2.3.1.7. One ship installation is anticipated under this delivery order.
- 2.3.1.7.1. Polish Navy, 1 ship, installation location is Gdynia, Poland estimated to be 1 trip with 90 day availability to complete install.
- 2.3.2.S/A 478K Video and Damage Control Tech Refresh (FMS Case # ATPGMD).
- 2.3.2.1. The following drawings are supplied to provide detail of the installation of S/A 478K.
- 2.3.2.1.1. FFG44-436-DE-8701052 Rev 2
  - 2.3.2.1.2. FFG44-436-DE-8701057 Rev 3
- 2.3.2.2. All tech refresh material will be provided by government.
- 2.3.2.3. Tech refresh only includes internal modifications to the equipment located in Central Control Station (CCS) as follows:



**2.3.2.3.1. Drawing FFG44-436-DE-8701052 Rev 2**

2.3.2.3.1.1. The contractor shall remove items 13, 14, 15 and 16 from equipment rack (item 3).

2.3.2.3.1.2. The contractor shall install tech refresh items of same form factors into the equipment rack.

2.3.2.3.1.3. The contractor shall terminate new hardware connections.

2.3.2.3.1.4. The contractor shall run two CAT5e Ethernet cables from equipment rack (KVM Switch) to the DCS console (item 1) and terminate on each end.

2.3.2.3.1.5. The contractor shall install video over IP Ethernet receiver in DCS console (item 1).

2.3.2.3.1.6. The contractor shall install DVI wiring harness from receiver to monitors.

2.3.2.3.1.7. The contractor shall install USB to PS2 wiring harness from receiver to console keyboard.

**2.3.2.3.2. Drawing FFG44-436-DE-8701057 Rev 3**

2.3.2.3.2.1. Sheet 16 shows the interconnection of the material to be removed/refreshed. Contractor shall remove all wiring terminations and re-terminate on new components in similar fashion.

2.3.2.3.3. The contractor shall provide support for post refresh testing of the system.

2.3.2.3.4. Royal Australian Navy (RAN) Tech refresh location is Sydney, Australia.

2.3.2.3.5. Length of tech refresh visit is estimated to be completed in 14 day availability.

### **3 APPLICABLE DOCUMENTS/REFERENCES**

The following instructions and standards are not all inclusive:

- 3.1 MIL-STD-2042B (SH) Fiber Optic Topology Installation Standard Methods for Naval Ships (Equipment/Connectors and Inter-connectors) - Validated 05/30/2007
- 3.2 NAVSEA S9AAO-AB-GOS-010/GSO, General Specifications for Overhaul of Surface Navy Ship - Version 11/30/2004 - Version 11/30/2004
- 3.3 DOD-STD-2003, Electric Plant Installation Standard Methods for Surface Ships and Submarines - Version 12/17/1990
- 3.4 MIL-STD-454, Standard General Requirements for Electronic Equipment – Version 04/15/2007
- 3.5 MIL-STD-1310 (Navy), Bonding and Grounding - Version 06/28/1996
- 3.6 OPNAV Instruction 5100.23G, Navy Occupational Safety and Health (NAVOSI-) Program Manual - Version 12/30/2005
- 3.7 Standards and Interpretations, Occupational Safety and Health Chapter I 1915.14, 1915.15 and 1915.16 - Version 12/30/2005
- 3.8 NAVSEA SL720-AA-MAN-020, FMP Management & Operations Manual – Version 06/01/2002

- 3.9 NAVSEA 9090-310D, SHIPALT by Alteration Installation Team - Version 02/2004 or later
- 3.10 NAVSSES Instruction 4720.2D, Process and Policy for Shipboard Industrial Work – Version 07/12/2007
- 3.11 MIL-STD-24749, Electrical Grounding, General Specifications - Version 08/13/1990
- 3.12 MIL-DTL-22520G, General Specification for Crimping Tools and Wire Termination – Version G, dated 09/12/1997
- 3.13 The following is a list of 478K drawing references - Hull Specific issued by Planning Yard
  - 3.13.1 7649038–478K, EPCS Upgrade Phase I local area network and Video Isometric Cabling Diagram - Hull Specific issued by Planning Yard
  - 3.13.2 7649039–478K, EPCS Upgrade Phase I local area network and Video Elementary Diagram - Hull Specific issued by Planning Yard
  - 3.13.3 7649045–478K, EPCS Upgrade Phase I circuit modifications - Hull Specific issued by Planning Yard
- 3.14 NAVSEA STANDARD ITEM 009-22 (Shipboard Electric Cable Test) - Version 07/19/2007
- 3.15 NAVSEA 0967-LP-000-0110 Electronics Installation and Maintenance Book, Installation Standards - Dated 09/01/1977
- 3.16 Government Furnished Material Lists - Hull Specific issued by Planning Yard
- 3.17 S0400-AD-URM'-010/TUM, Tag-Out Users Manual ANSI/ASQC Q9002-1994, Quality Systems, Model for Quality Assurance in Production, Installation, and Servicing – Dated 05/29/2009
- 3.18 ANSI/ISO/ASQ Q9001-2000, Quality Management Systems - Requirements – Version 11/15/2008
- 3.19 NAVSEA STANDARD ITEMS (All Category I) <http://www.supship.navy.mil/ssrac4/standard.htm>

#### **4 DELIVERABLES**

- 4.1 Contract Financial Status Reports: A monthly progress and financial report will be submitted to the Subject Matter Expert (SME) with a copy to the Contracting Officer. (CDRL A002)
- 4.2 QA Workbook 30 days prior to start of the installation. (CDRL A004)
- 4.3 Red-Lined Ship Installation Drawings. (CDRL A008)
- 4.4 Pre-installation Site Survey Results. Contractor shall provide a report for ship check one week after completion. Report shall include discrepancies impeding installation, condition of legacy sensors and red lined drawings. (CDRL A013)

4.5 Weekly Production Status Reports. (CDRL A007)

4.6 Installation Completion Report: Contractor shall immediately fax completion report to NSWCCD at the conclusion of any alteration. (CDRL A014)

## **5 GOVERNMENT FURNISHED MATERIAL/INFORMATION**

5.1 NSWCCD will provide all available drawings and associated documentation.

5.2 NSWCCD will provide Shipboard Integrated Test Plan and Test Procedures which will be used to test functionality of all SCD installed/relocated systems or equipment.

5.3 NSWCCD and planning yard will provide all required GFM and GFI to complete SOW indicated in Ref 3.16.

## **6 CONTRACTOR FURNISHED MATERIAL**

6.1 Provide all miscellaneous and incidental installation material identified as IAF in the installation drawings and auxiliary equipment.

6.2 Furnish all necessary test equipment to validate installation, testing and operation of cables, material, and equipment in the execution of this delivery order.

## **7 TRAVEL**

7.1 The tasks in this solicitation will be performed at various Naval Regional Maintenance Centers (RMC) so the offeror will be evaluated on the ability to manage manpower from the offeror's main production site as well as satellite sites throughout the country to minimize personnel travel and costs. In some cases where tasks are performed at allied countries, the offeror will be evaluated on their ability to coordinate with NSWCCD-SSSES Team Lead and host country Liaison for support based on local labor laws.

7.2 Travel locations are as follows:

Manama, Bahrain  
Sasebo, Japan  
San Diego, CA  
Gdynia, Poland  
Sydney Australia

## **8 OVERTIME**

8.1 Overtime will be required to support ship schedules and shorten pier side availabilities. Overtime will also minimize the down time of Combat Systems equipment and allow completion to support the ship's operation schedule

**9 CLASSIFIED MATERIAL/INFORMATION:** None

**10 PERIOD OF PERFORMCE:** Date of Award through 3 March 2018.

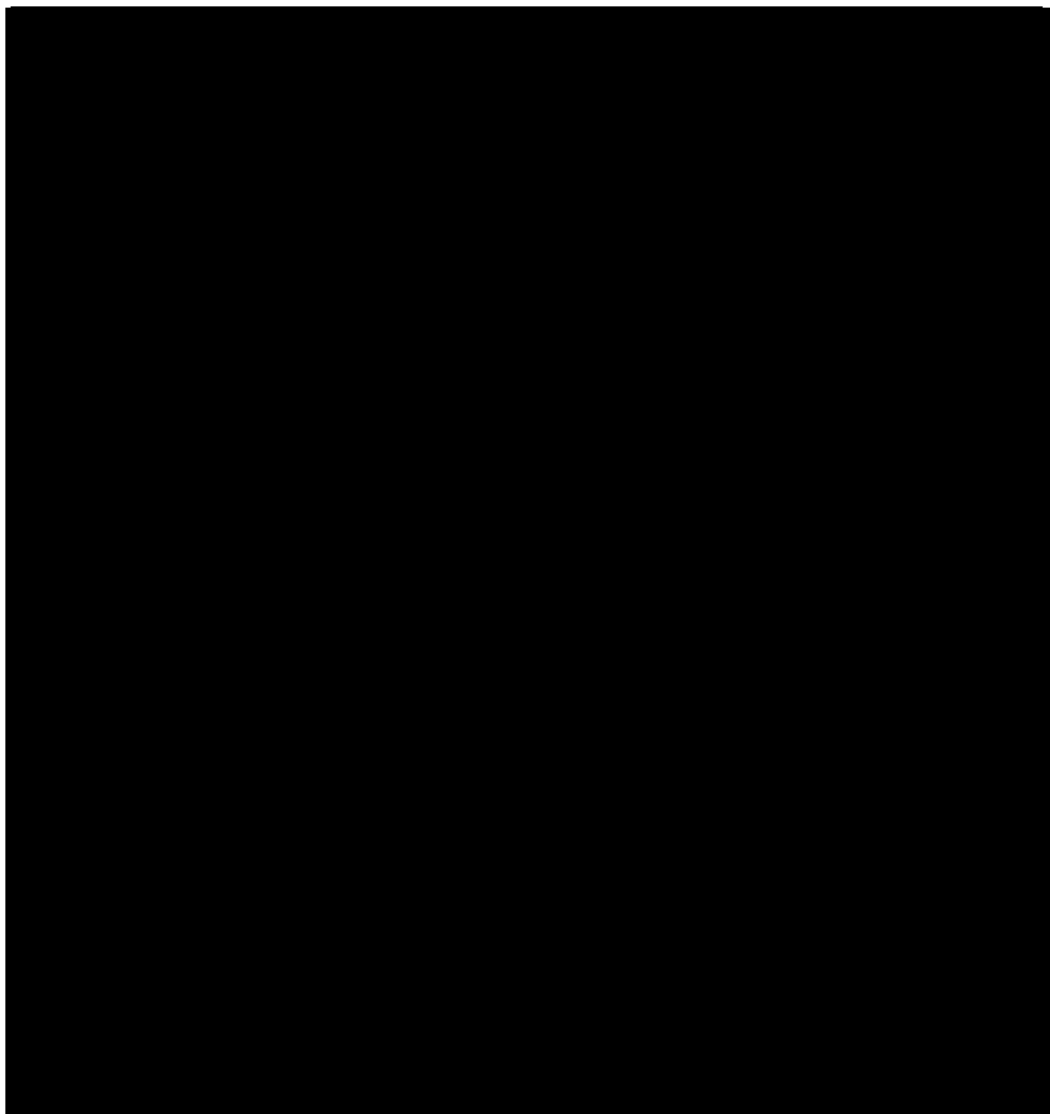
**11 COR:** (b) (6)(b) (6)(b) (6)(b) (6)(b) (6)(b) (6)

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**12 TECHNICAL POINT OF CONTACT:** (b) (6)(b) (6)(b) (6)(b) (6)(b) (6)

**13 FINANCIAL POINT OF CONTACT:** (b) (6)(b) (6)(b) (6)(b) (6)(b) (6)(b) (6)

LEVEL OF EFFORT



Section E - Inspection and Acceptance

INSPECTION AND ACCEPTANCE

Inspection and Acceptance will be performed by the COR, (b) (6)(b) (6)(b) (6) Naval Surface Warfare Center Carderock Division, Philadelphia, PA.

## Section F - Deliveries or Performance

## DELIVERY INFORMATION

CLIN	DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
0001	POP 20-AUG-2015 TO 03-MAR-2018	N/A	NAVAL SURFACE WARFARE CENTER CARDEROCK (b) (6)(b) (6)(b) (6) (b) (6)(b) (6)(b) (6)(b) (6)(b) (6) (b) (6)(b) (6)(b) (6)(b) (6)(b) (6)(b) (6) (b) (6)(b) (6) FOB: Destination	N65540
000101	N/A	N/A	N/A	N/A
0002	POP 20-AUG-2015 TO 03-MAR-2018	N/A	NAVAL SURFACE WARFARE CENTER CARDEROCK (b) (6)(b) (6)(b) (6) (b) (6)(b) (6)(b) (6)(b) (6) (b) (6)(b) (6)(b) (6)(b) (6)(b) (6) (b) (6)(b) (6) FOB: Destination	N65540
000201	N/A	N/A	N/A	N/A
0005	POP 20-AUG-2015 TO 03-MAR-2018	N/A	NAVAL SURFACE WARFARE CENTER CARDEROCK (b) (6)(b) (6)(b) (6) (b) (6)(b) (6)(b) (6)(b) (6)(b) (6) (b) (6)(b) (6)(b) (6)(b) (6)(b) (6)(b) (6) (b) (6)(b) (6) FOB: Destination	N65540

**Section G - Contract Administration Data****PAYMENT INSTRUCTIONS**

Payment Instructions shall be in accordance with those found in the base contract – N65540-15-D-0005.

**FUNDING**

This order has been provided incremental funding in the amount of [REDACTED]. As a result, the total amount of funding obligated and available for payment under this order is [REDACTED]. It is estimated that the funding under this order will cover the cost of performance through 30 September 2015. In accordance with contract clause 52.232-22, Limitation of Funds, the Government is not obligated to reimburse the contractor for any costs incurred in excess of [REDACTED] unless additional funds are made available and obligated under this order in a subsequent modification. The total unfunded balance remaining is [REDACTED] based on the total contract value.

**ACCOUNTING AND APPROPRIATION DATA**

AA: 1751810 82LV 251 VU021 0 050120 2D 000000

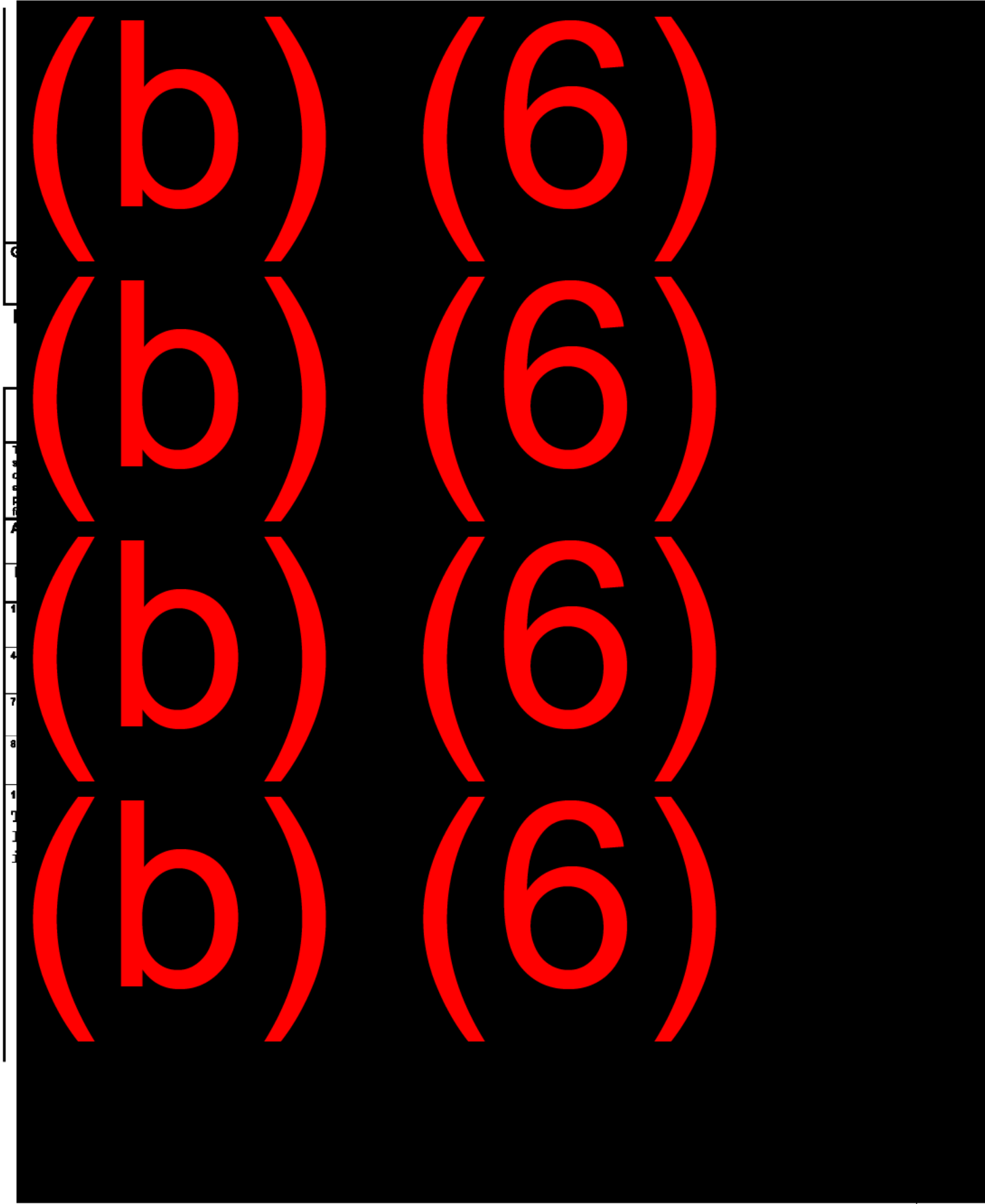
COST CODE: A00003002650

AMOUNT: [REDACTED]

CIN 130051764000001: [REDACTED]

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